

What is claimed is:

1. A method for decomposing a halogenated hydrocarbon gas comprising the steps of:

supporting a catalyst for decomposing the halogenated hydrocarbon gas on a carrier which is electrically conductive and resistant to a halogen-containing gas; and

passing the gas containing the halogenated hydrocarbon through the carrier to decompose the halogenated hydrocarbon gas, while heating the carrier by an electromagnetic induction heating.

2. The method of claim 1, wherein the carrier comprises at least one material selected from the group consisting of SiC and stainless steel.

3. The method of claim 1, wherein the catalyst comprises at least one element selected from the group consisting of Pt, Pd, Au, Rh, and Ni.

4. The method of claim 1, wherein the catalyst comprises at least one element selected from the group consisting of W, Cr, Fe, Mo, and V.

5. The method of claim 1, wherein the catalyst comprises: at least one element selected from the group consisting of Pt, Pd, Au, Rh, and Ni; at least one element selected from the group

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consisting of W, Cr, Fe, Mo, and V; and titania ( $\text{TiO}_2$ ).

6. The method of claim 1, wherein the catalyst comprises: at least one element selected from the group consisting of Pt, Pd, Au, Rh, and Ni; and titania ( $\text{TiO}_2$ ).

7. The method of claim 1, wherein the catalyst comprises: at least one element selected from the group consisting of W, Cr, Fe, Mo, and V; and titania ( $\text{TiO}_2$ ).

8. A method for decomposing a halogenated hydrocarbon gas comprising the step of:

passing a halogenated hydrocarbon containing gas through a heating body which is electrically conductive and resistant to a halogen-containing gas to decompose the halogenated hydrocarbon gas, while heating the heating body by an electromagnetic induction heating.

9. The method of claim 8, wherein the heating body is a structure made of at least one material selected from the group consisting of SiC and stainless steel.

10. An apparatus for decomposing a halogenated hydrocarbon gas comprising:

a catalyst for decomposing the halogenated hydrocarbon gas;

a carrier supporting the catalyst, wherein the carrier

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is resistant to the halogen-containing gas and electrically conductive and the halogenated hydrocarbon gas decomposition catalyst passes through the heating body; and

a heating mechanism heating the carrier by an electromagnetic induction heating.

11. An apparatus for decomposing a halogenated hydrocarbon gas comprising:

a heating body which is resistant to a halogen-containing gas and electrically conductive, wherein the halogenated hydrocarbon gas passes through the heating body; and

a heating mechanism heating the heating body by an electromagnetic induction heating.

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